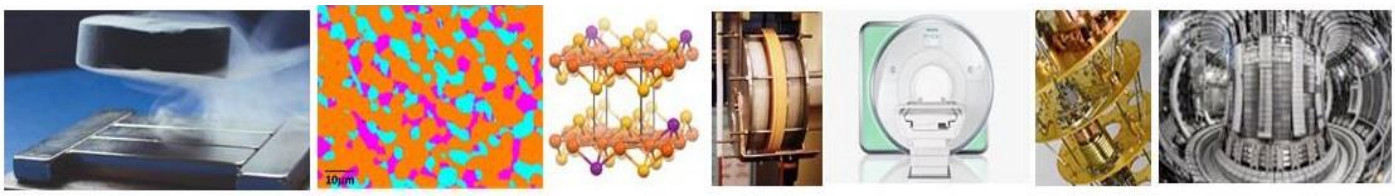
Oxfordshire Local Enterprise Partnership
Local Growth Fund Evaluation Report:

Oxford Centre for Applied Superconductivity



The Applied Superconductivity Hub is a joint project between the Materials Department and the Physics Department of the University of Oxford studying future applications of superconducting materials. The planned outcome, which has been successful, was to engage with local industry and research centres that have an interest in the application of superconductivity, this has been achieved by the investment of £1,558,739 in Enabled Funding. The Centre continues to pursue projects that can lead to future technologies and lead to the discovery of novel superconducting materials. The Centre is helping to train people with necessary skills in superconductivity which can be transferable to other relevant industries. A series of experimental and testing facilities have been established that allow easy interaction between academia and industry to solve relevant problems.

Superconductors are materials with no electrical resistance which are vital for powerful new technologies in healthcare, large experimental facilities like CERN, quantum instrumentation and many other fields.

The new facilities include the following:

- Panalytical Empyrean X-ray Diffractometer
- Attocube Magnetic Force Microscope
- AttoDRY 1000
- Test Pulsed Deposition (PLD) facility
- 16T Physical Properties Versatile Measurement System
- High Current Power Supplies (2400 A)

The Oxford Centre for Applied Superconductivity project was supported by £4,490,000 from the Government's Local Growth Fund secured by the Oxfordshire Local Enterprise Partnership (OxLEP) with match funding of £2,420,000 from the University of Oxford. The project began in July 2016 and completed in December 2017.

The project has enabled Oxford University to play an expanded role in developing the strategy of UKAEA in the national Small Tokamak for Energy Production programme. In addition, the research team at Oxford University have advanced both the wider international knowledge base and assisted Oxford Instruments Nanoscience to gain a deep understanding of both the complexity and opportunities of jointing these High-temperature Superconductivity materials. Personnel trained through the CfAS project have taken up positions in local industry and national laboratories (Tokamak Energy, UKAEA), and are now able to influence key technical decisions in the use of superconductivity in the UK's future fusion reactors.

In conjunction with Oxford University the Centre has produced a presentation in lay-man's terms on the science of Superconductivity. https://www.cfas.ox.ac.uk/discover

The project has exceeded the planned outcomes as outlined below:

- 15.5 jobs against a planned output of 13.5 jobs
- 26 traineeships against a planned output of 11 traineeships
- 216 sqm new and improved floorspace achieved in accordance with the planned output

The personnel trained continue to be influential in the use of superconductivity both nationally and internationally thereby adding to the project outcomes.

Supported by the Local Growth Fund